

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A liquid crystal display comprising:

a liquid crystal panel including a plurality of the data lines extending in a column direction, a plurality of the gate lines in a row direction, and a plurality of first to third color pixels displaying image based on signals received from the data lines and the gate lines and arranged in a matrix;

a data driver configured to apply ~~applying~~ data voltages required for image display to the data lines; and

a signal controller configured to receive ~~receiving~~ a plurality of first to third color image data for the first to third color pixels, supplying ~~supply~~ the received image data to the data driver, and generating ~~generate~~ control signals required for driving the liquid crystal panel,

wherein the signal controller changes an inversion type when 1) dot blocks are repeated in a predetermined pattern, each dot block including one or more pairs of adjacent pixels in a row for at least one of the first to third color pixels, and 2) a magnitude of difference in gray between the pixels in each pair is larger than a critical value in each dot block,

wherein the predetermined pattern includes a first dot block in a first row and a second dot block located in the same columns as the first dot block in a second row adjacent to the first row, wherein the first dot block has the gray differences of a first sign, and the second dot block has the gray differences of a second sign that is opposite to the first sign,

wherein the signal controller determines whether each dot block is the first dot block or the second dot block, and

wherein the signal controller comprises:

a line counter for determining a row to which the block belongs; and

a block counter for determining the position of the block in the row.

2. (Previously Presented) The liquid crystal display of claim 1, wherein the critical value has the first to third values for the first to third colors, and the first to third values are equal or different.

3. (Original) The liquid crystal display of claim 2, wherein the first to third colors are red, green and blue colors, respectively, and the second value is smaller than the first and third values.

4-5. (Cancelled).

6. (Previously Presented) The liquid crystal display of claim 1, wherein the pixels in each row are grouped into a plurality of blocks, each block including even number of pixels.

7. (Cancelled).

8. (Previously Presented) The liquid crystal display of claim 1, wherein the block counter counts the blocks by counting clock cycles after a data enable signal indicating sections for inputting the image data becomes a high level.

9. (Previously Presented) The liquid crystal display of claim 1, wherein the block counter counts the blocks by counting clock cycles after a predetermined number of clocks from raise of a horizontal synchronization signal to be input to the signal controller to a high level.

10. (Previously Presented) The liquid crystal display of claim 1, wherein the line counter counts the rows based on timing of a data enable signal indicating sections for inputting the image data for a row or on timing of a horizontal synchronization signal.

11. (Previously Presented) A method of driving a liquid crystal display including a liquid crystal panel including a plurality of the data lines extending in a column direction, a plurality of the gate lines in a row direction, and a plurality of pixels arranged in a matrix, and a signal controller receiving a plurality of the RGB image data and generating control signals for driving the liquid crystal panel, the method comprising:

calculating a difference in gray between every two image data applied to a pair of adjacent odd and even pixels in each block including pixels in a row for each of first to third colors;

determining that a block is first or second dot block depending on a sign of the gray difference when a magnitude of the gray difference between the odd pixel and

the even pixel in each pair in the block for at least one color is larger than a critical value, the first dot block having the gray differences of a first sign, and the second dot block having the gray differences of a second sign that is opposite to the first sign;

determining whether a previous block in a previous row and the same column is the first or second dot block when a current block in a current row and the same column is the first or second dot block, wherein the current block is determined to be a one-dot block when the current block is the first dot block and the previous block is the second dot block; and

changing an inversion type of the liquid crystal display when the number of the one-dot blocks is larger than a predetermined value,

wherein the signal controller comprises:

a line counter for determining a row to which the block belongs; and

a block counter for determining the position of the block in the row.

12. (Previously presented) The method of claim 11, wherein the critical value has the first to third values for the first to third colors, and the first to third values are equal or different.

13. (Original) The method of claim 12, wherein the first to third colors are red, green and blue colors, respectively, and the second value is smaller than the first and third values.

14. (Cancelled).

15. (Previously Presented) The method of claim 12, wherein the rows including the blocks are counted based on timing of a data enable signal indicating sections for inputting the image data for a row or on timing of a horizontal synchronization signal.

16. (Previously Presented) The method of claim 12, wherein the blocks are counted by counting clock cycles after a horizontal synchronization signal to be input to the signal controller becomes in a high level.

17-20. (Cancelled).

21. (Currently amended) A liquid crystal display, comprising:

a liquid crystal panel including a plurality of the data lines extending in a column direction, a plurality of the gate lines in a row direction, and a plurality of first to third color pixels displaying image based on signals received from the data lines and the gate lines and arranged in a matrix;

a data driver configured to apply ~~applying~~ data voltages required for image display to the data lines; and

a signal controller configured to receive ~~receiving~~ a plurality of first to third color image data for the first to third color pixels, supplying ~~supply~~ the received image data to the data driver, and generating ~~generate~~ control signals required for driving the liquid crystal panel,

wherein the signal controller changes an inversion type when 1) dot blocks are repeated in a predetermined pattern, each dot block including one or more pairs of adjacent pixels in a row for at least one of the first to third color pixels, and 2) a magnitude of difference in gray between the pixels in each pair is larger than a critical value in each dot block,

wherein the predetermined pattern includes a first dot block in a first row and a second dot block located in the same columns as the first dot block in a second row adjacent to the first row,

wherein the first and second blocks have the gray differences of a first sign or the first and second blocks have the gray differences of a second sign that is opposite to the first sign,

wherein the signal controller determines whether each block is the first dot block or the second dot block, and

wherein the signal controller comprises:

a line counter for determining a row to which the block belongs; and

a block counter for determining the position of the block in the row.

22. (Previously presented) A method of driving a liquid crystal display including a liquid crystal panel including a plurality of the data lines extending in a column direction, a plurality of the gate lines in a row direction, and a plurality of pixels arranged in a matrix, and a signal controller receiving a plurality of the RGB image data and generating control signals for driving the liquid crystal panel, the method comprising:

calculating a difference in gray between every two image data applied to a pair of adjacent odd and even pixels in each block including pixels in a row for each of first to third colors;

determining that a block is first or second dot block depending on a sign of the gray difference when a magnitude of the gray difference between the odd pixel and the even pixel in each pair in the block for at least one color is larger than a critical value, the first dot block having the gray differences of a first sign, and the second dot block having the gray differences of a second sign that is opposite to the first sign;

determining whether a previous block in a previous row and the same column is the first or second dot block when a current block in a current row and the same column is the first or second dot block, wherein the current block is determined to be a double-dot block when both the current block and the previous block are the first dot blocks or the second dot blocks; and

changing an inversion type of the liquid crystal display when the number of the double-dot blocks is larger than a predetermined value,

wherein the signal controller comprises:

a line counter for determining a row to which the block belongs; and

a block counter for determining the position of the block in the row.

23. (Previously presented) A method of driving a liquid crystal display including a liquid crystal panel including a plurality of the data lines extending in a column direction, a plurality of the gate lines in a row direction, and a plurality of pixels arranged

in a matrix, and a signal controller receiving a plurality of the RGB image data and generating control signals for driving the liquid crystal panel, the method comprising:

calculating a difference in gray between every two image data applied to a pair of adjacent odd and even pixels in each block including pixels in a row for each of first to third colors;

determining that a block is first or second dot block depending on a sign of the gray difference when a magnitude of the gray difference between the odd pixel and the even pixel in each pair in the block for at least one color is larger than a critical value, the first dot block having the gray differences of a first sign, and the second dot block having the gray differences of a second sign that is opposite to the first sign;

determining whether a previous block in a previous row and the same column is the first or second dot block when a current block in a current row and the same column is the first or second dot block, wherein the current block is determined to be a first double-dot block when both the current block and the previous block are the first dot blocks, or the current block is determined to be a second double-dot block when both the current block and the previous block are the second dot blocks; and

changing an inversion type of the liquid crystal display when the number of the first dot blocks is larger than a first critical value and the number of the first double-dot blocks is larger than a predetermined number of the first dot blocks, or the number of the second dot blocks is larger than a second critical value and the number of the second double-dot blocks is larger than a predetermined number of the second dot blocks,

wherein the signal controller comprises:

a line counter for determining a row to which the block belongs; and

a block counter for determining the position of the block in the row.